

**Amendments to the Specification:**

Please replace paragraph [0002] with the following amended paragraph:

[0002] Optoelectronic (OE) devices are generally packaged as individual ~~die~~ dies. This means of assembly is often slow and labor intensive, resulting in higher product cost. Thus, what is needed is a method to improve the packaging of OE devices.

Please replace paragraph [0011] with the following amended paragraph:

[0011] Figs. 20A and 20B illustrate an ~~OSA~~ OECE utilizing an alignment post in one embodiment of the invention.

Please replace paragraph [0014] with the following amended paragraph:

[0014] Fig. 23 illustrates an ~~OSA~~ OECE with a cylindrical alignment post inserted into a sleeve in one embodiment of the invention.

Please replace paragraph [0015] with the following amended paragraph:

[0015] Fig. 24 illustrates an ~~OSA~~ OECE with a solid alignment post inserted into a sleeve in one embodiment of the invention.

Please replace paragraph [0016] with the following amended paragraph:

[0016] Fig. 25 illustrates an ~~OSA~~ OECE with a solid alignment sphere inserted into a sleeve in one embodiment of the invention.

Please replace paragraph [0022] with the following amended paragraph:

[0022] To form the stack, an amorphous silicon layer is first formed on substrate 54. The amorphous silicon layer can be deposited by low pressure chemical vapor deposition (LPCVD) at 550°C or by plasma enhanced chemical vapor deposition (PECVD). The thickness of the amorphous silicon layer can be determined by the following formula:

$$t = \frac{\lambda}{N(\Delta n_i)} .$$

In the above equation, t is the thickness of the phase shifting lens layer,  $\lambda$  is the target wavelength, N is the number of the phase shifting lens layer, and  $\Delta n_i$  is the difference in the refractive index ( $n_i$ ) between the phase shifting lens material and it's surrounding. In one embodiment where  $\lambda$  is

1310 nm, N is eight,  $n_i$  of amorphous silicon is 3.6, and  $n_i$  of silicon dioxide is 1.46, the amorphous silicon layer has a typical thickness of 765 angstroms.

Please replace paragraph [0023] with the following amended paragraph:

[0023] A silicon dioxide (SiO<sub>2</sub>) layer is next formed on the amorphous silicon layer. The silicon dioxide layer can be thermally grown on the amorphous silicon layer in steam at 550°C. Alternatively, silicon dioxide layer can be deposited by PECVD. The silicon dioxide layer has a typical thickness of 50 angstroms. The process of depositing amorphous silicon and low temperature thermal oxidation of the amorphous silicon is repeated for the desired number of phase ~~shift~~ shifting layers.

Please replace paragraph [0026] with the following amended paragraph:

[0026] In another embodiment, lens 52 is a hybrid diffractive/refractive element. The hybrid diffractive/refractive element spreads the light ~~from~~ over a volume to expand the alignment tolerance for an optical fiber as described above. The hybrid diffractive/refractive lens has at least one surface with a curvature for one focal length, e.g., f<sub>2</sub>. Further, diffractive features of a partially efficient diffractive lens are superimposed on one or both surfaces of hybrid diffractive/refractive lens so that the combination provides two focal length f<sub>1</sub> and f<sub>2</sub> for separate fractions of the incidence light.

Please replace paragraph [0036] with the following amended paragraph:

[0036] In step 30, as illustrated in Fig. 15, a lid 130 is formed. Lid 130 defines a cavity 131 having a surface 132 covered by a reflective material 134. Cavity 131 provides the necessary space to accommodate dies that are on submount 80. Reflective material 134 on surface 132 forms a 45 degree mirror 135 that reflects a light from ~~[[a]]~~ laser die 122 to lens 52. Reflective material 134 at the edge of lid 130 also acts as a seal ring 136. Reflective material 134 over cavity 131 also serves as an EMI shield when it is ~~ground~~ grounded through contact between seal ring rings 136 and 106, the latter being grounded through contact pads 108 and 110. In one embodiment, reflective material 134 is titanium-platinum-gold (TiPtAu) sequence deposited by evaporation. Titanium has a typical thickness of 0.1 micron, platinum has a typical thickness of 0.1 micron, and gold has a typical thickness of 0.1 micron. In one embodiment, lid 130 is a silicon wafer of a standard thickness (e.g., 675 microns) that is transparent to 1310 nm light.

Please replace paragraph [0039] with the following amended paragraph:

[0039] As can be seen, a light 152 (e.g., 1310 nm) is emitted by laser die 122. Light 152 is reflected from mirror 135 downwards to lens 52. Lens 52 then focuses light 152 so it can be received by an optical fiber at a specified location. As insulator layer 64, oxide layer 56, and substrate 54 are transparent to light 152, light 152 can exit ~~optoelectronic device~~ OECE 150 through submount 80.

Please replace paragraph [0050] with the following amended paragraph:

[0050] Fig. 21 illustrates the assembly of OSA 306 and an FO connector 307 in one embodiment of the invention. FO connector 307 can ~~[[by]]~~ be an LC connector, a SC connector, a ST connector, a FC connector, or other similar FO connectors. Alignment post 304 on a fully aligned OSA 306 is inserted into one end of a sleeve 308 made from plastic, metal or ceramic. This subassembly of OSA 306 and sleeve 308 forms part of a fiber optic module that would mate with a fiber optic cable, such as a fiber 312 in FO connector 307, supplied by the user. A ceramic ferrule 310 carrying fiber 312 is inserted in another end of sleeve 308. Sleeve 308 is made with the proper inner diameter (ID) to accept the outer diameter (OD) of alignment post 304 and ferrule 310. The insertion of the OSA 306 into sleeve 308 would be entirely passive, and therefore a low cost operation.

Please replace paragraph [0051] with the following amended paragraph:

[0051] It is important to note that although alignment post 304 may look similar to port 224 (Fig. 18) on conventional OSA 212 (Fig. 18), it is fundamentally different because the alignment feature on alignment post 304 is the ~~outer diameter (OD)~~ OD and the alignment feature on port 224 is the ~~inner diameter (ID)~~ ID. Referring to Fig. 17, the ID of port 224 is normally a few microns larger than the OD of the mating ferrule 216. Port 224 may have a 1.255 mm ID to mate with a 1.249 mm OD of ferrule 216. Referring to Fig. 21, alignment post 304 has the same or similar OD (e.g., 1.25 mm) as ferrule 310. The optical distance from lens 311 of OECE 302 to fiber 312 would be set by the length of alignment post 304. The hole in the center of alignment post 304 is not used for alignment but only to allow light 316 to pass through. Thus, the size of the hole is not critical. The dimensions in the above description are typical for launching light into multi-mode fibers. The concepts described is also applicable to OSAs for launch into single-mode fibers but the tolerances required for single-mode fibers may be tighter than those required for multi-mode launch.